

FASD and Mental Health

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Terminology

FASD, Fetal Alcohol Spectrum Disorder, refers to the spectrum of physical & neurological conditions occurring as a result of prenatal exposure to alcohol. ¹ FASD is an umbrella term not a diagnostic one. Diagnosis of FASD conditions involves four domains: growth retardation, facial anomalies, brain changes and prenatal exposure to alcohol. FASD refers to the following medical conditions: ²

- **FAS-Fetal Alcohol Syndrome:** FAS is diagnosed when there is clear evidence of: brain dysfunction/damage, growth retardation, and a characteristic pattern of facial anomalies caused by gestational exposure to alcohol.
- **PFAS-Partial Fetal Alcohol Syndrome:** PFAS is diagnosed when there is clear evidence of: brain dysfunction/damage or growth retardation, some of the characteristic facial anomalies as well as confirmed maternal alcohol exposure.
- **ARBD-Alcohol Related Birth Defects:** ARBD is diagnosed when there is clear evidence of: pattern of physical birth defects and confirmed maternal alcohol exposure.
- **ARND-Alcohol Related Neurodevelopmental Disorder:** ARND is diagnosed when there is clear evidence of: brain dysfunction/damage as well as confirmed maternal alcohol exposure.

Is FASD A Health Problem In New Brunswick?

The estimated incidence of FASD in North America is approximately: ³

1%

10: 1000

If the incidence in New Brunswick is 1% than 7-8,000 people in the province are affected with FASD disabilities.

The prevalence rates in some communities in Canada have been found to be much higher. ⁴ Research indicates the prevalence is also higher in some New Brunswick communities. The incidence in one New Brunswick First Nation was approximately: ⁵

20%

200: 1000

³ Chudley AE, Conry J, Cook JL et al. Fetal alcohol spectrum disorder: Canadian guidelines for diagnosis. CMAJ Mar. 2005; 172 (5 suppl)

² Stratton K, Howe C, and Battaglia F. Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention and Treatment. Institute of Medicine, Washington: National Academy Press: 1996

³ Sampson PD, Streissguth AP, Bookstein FL, et al. Incidence of fetal alcohol syndrome and prevalence of alcohol related neurodevelopmental disorder. Teratology 1997;56 (5): 317-26

⁴ Robinson GC, Conry JL, Conry RF. Clinical profile and prevalence of fetal alcohol syndrome in an isolated community in British Columbia. See also: Square D. Fetal alcohol syndrome epidemic on Manitoba reserve. CMAJ 1997; 157 (1): 59-60. Also: Williams RJ, Odaibo FS, McGee JM. Incidence of fetal alcohol syndrome in northeastern Manitoba. Can J Public Health 1999,90 (3): 192-4

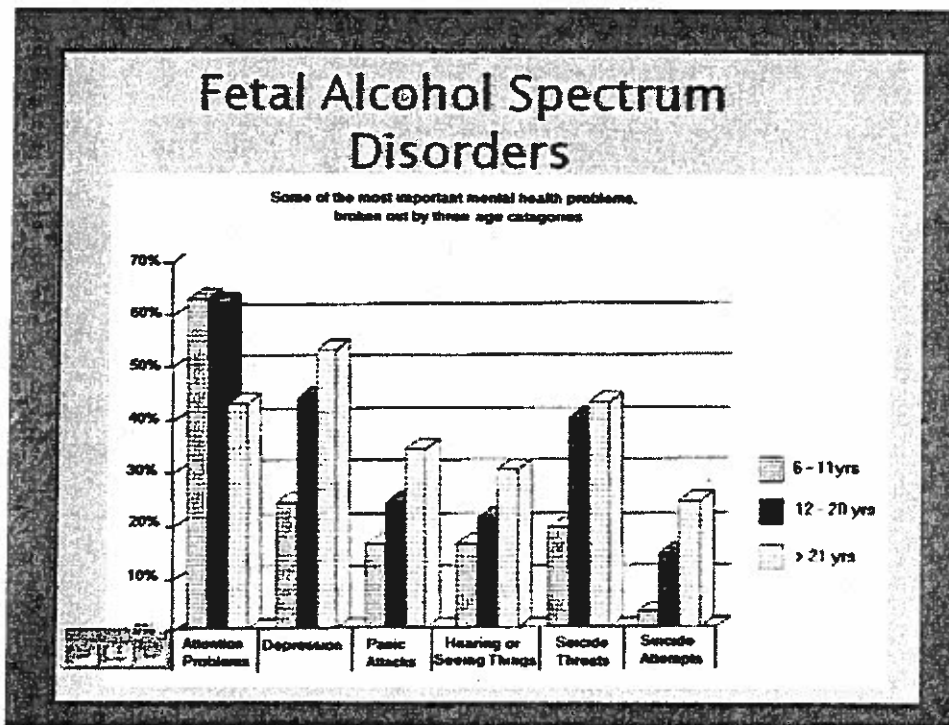
⁵ Cox L, Dickenson M The prevalence of FASD in a Maritime First Nation community. Presented at the FACE Research Roundtable 2006 (In revision: accepted for publication in Int JFAS 2007)

FASD is not just an aboriginal problem

There is a high prevalence of alcohol related birth disabilities¹⁰ in any community where women in their childbearing years consume alcohol. It affects people of all colors and cultures all over the world.⁶ Not everyone who drinks when pregnant will have a baby with FASD. However, long-term longitudinal research indicates that even low to moderate drinking will significantly increase the chances of having an affected child. Many women drink before they know they are pregnant or because they do not know that light or moderate drinking can affect their baby.⁷ Researchers estimate that tens of thousands of Canadian adults are affected with Fetal Alcohol Spectrum Disorders and never diagnosed.⁸

Is FASD A Mental Health Problem?

- According to researchers 90% of individuals with FASD also have Mental Health Disabilities
- Most of these individuals have never been diagnosed and so the etiology of their disability is misunderstood
- A meta-analytical review of the research showed that low levels of drinking had significant mental effects on prenatally exposed individuals at 12 months of age
- Behavioral functioning is impaired to the point that 23.3% of the youth remanded to custody in BC youth court and referred to forensic psychiatry were screened for FASD and subsequently diagnosed with an alcohol related birth disability.⁹



⁶ Riley E, Mattson S, Li Ting-Kai, Jacobson, S wet al. Neurobehavioral Consequences of Prenatal Alcohol Exposure: An International Perspective *Al Clin Exp Res* 2003; 27 (2) 362

⁷ Sood B, Delany-Black V, Covington C, et al. Prenatal alcohol exposure and childhood behavior at age 6 to 7 years: a dose response affect. *Pediatric* 2001;108 (2): E34

¹⁰ Donovan K. Executive Summary of Fetal Alcohol Syndrome: A preventable tragedy. Report of the standing committee on health, welfare social affairs seniors and the status of women 1992

⁹ Conry J and Fast DK. Fetal Alcohol Syndrome and the Criminal Justice System. Vancouver; British Columbia FAS Resource Society: The Law Foundation of BC 2000.

FASD Is a Developmental Disability

FASD disabilities last a lifetime. Pre-natal alcohol exposure can affect all aspects of an individual's development: mental, emotional, social, and physical.¹⁰ FASD is now recognized as one of the leading birth disabilities in North America that seriously affects brain functioning and impairs both intellectual and psychological development.¹¹ Alcohol is a neurotoxin that causes more damage to a babies developing brain than cocaine, heroin, barbiturates or marihuana. ¹² It is the leading cause of mental retardation in the western world although most people with FASD would not be diagnosed as mentally challenged.¹³ Brain damage caused by prenatal exposure to alcohol can lead to severe functional and behavioural challenges. These prevent people with FASD from using the intelligence they do have to learn and develop unless appropriate environmental adaptations are implemented at home and at school.

Functional Behavior

Individual With FASD	Age 18
Physical Maturity	Age 18
Comprehension	Age 6
Money/Time Concepts	Age 8
Emotional Maturity	Age 6
Reading Ability	Age 16
Social Skills	Age 7
Living Skills	Age 11

Ann Streissguth-Vineland Adaptive Behavior Scales

¹⁰ Streissguth A, Barr M et al. Primary and secondary disabilities in Fetal Alcohol Syndrome. In Streissguth AP and Kanter J. The Challenge of Fetal Alcohol Syndrome: Overcoming Secondary Disabilities. Seattle Washington; University of Washington Press 1997

¹¹ LaDue RA, Streissguth AP, Randels SP. Clinical considerations pertaining to adolescents and adults with fetal alcohol syndrome. In: Sonderegger T (ed.) Prenatal Substance Abuse: Research Findings and Clinical Implications. Baltimore; Johns Hopkins University Press 1989

¹² Riley E and McGee CL. Fetal Alcohol Spectrum Disorders: An Overview with Emphasis on Changes in Brain and Behavior. Society for Experimental Biology and Medicine. Symposium 2005

¹³ Abel EL and Skolt RJ Fetal Alcohol Syndrome is now Leading Cause of Mental Retardation. *The Lancet* 2(8517): 1222.

Limited Access to FASD Services

FASD disabilities are 100% preventable but access to FASD diagnosis, intervention and prevention services is still limited or non-existent in many parts of Eastern and Northern Canada. The Public Health Agency of Canada recommends abstinence when pregnant as

well as the training of health professionals and improved access to FASD diagnosis, intervention and prevention. Despite this some health practitioners in New Brunswick still tell women that a few glasses of wine a day when they are pregnant will not harm their unborn baby.¹⁴

Alcohol and the Brain

Researchers have been able to use Magnetic Resonance Imaging, MRI's, to study alcohol's effect on the brain.¹⁵ They found that in some areas of the brain there are greater than normal amounts of gray matter and in other areas lesser than normal amounts of white matter. There is less symmetry and also distortions in shape. They have found subtle changes in the volume, shape, and location of many brain structures including the *corpus callosum*, *basil ganglia*, *hippocampus*, *cerebellum* and *cerebrum*. Changes in these brain structures mean changes in cognitive function and functional behaviours related to areas such as: working memory, logic, attention, visual-spatial abilities, executive functioning, and information processing. Researchers have found that individuals pre-natally exposed to alcohol with or without characteristic physical features displayed neurobehavioral deficits in the following areas:¹⁶

- Language
- Social communication
- Memory
- Adaptive behaviour
- Attention
- Visual-spatial ability
- Abstract reasoning
- Cognitive ability

Secondary Disabilities

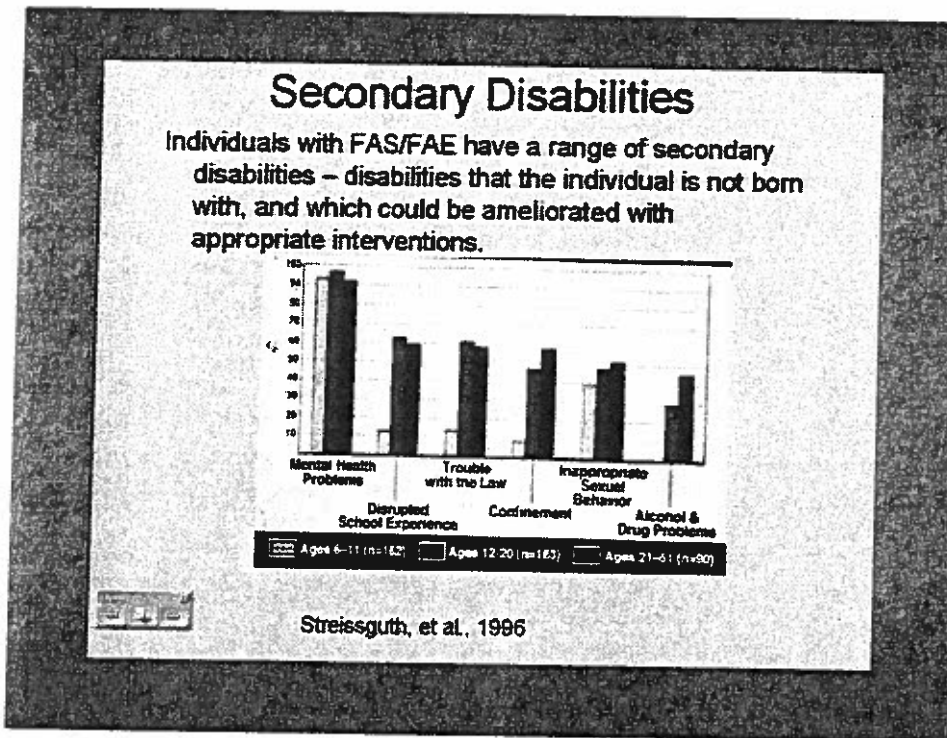
Without early diagnosis and support for their primary FASD disability 90% of individuals disabled with FASD develop secondary disabilities. These occur because of the failure to deal appropriately with the primary disabilities of FASD. Secondary disabilities include mental illness, addictions, trouble with the law and suicide.¹⁷

¹⁴ Dr. Lori Vitale Cox--case notes

¹⁵ Mattson S and Riley E. A Review of the Neurobehavioral Deficits in Children with Fetal Alcohol Syndrome or Prenatal Exposure to Alcohol. *Alcohol Clin Exp Res* 1998 22 (2) 279

¹⁶ Streissguth AP, Bookstein FL, Sampson PD and Barr HM. Neurobehavioral effects of prenatal alcohol. *Neurotoxicol Teratol* 1989: 11:493

¹⁷ Streissguth AP, Barr HM, Kogan J, and Bookstein FL. Understanding the Occurrence of Secondary Disabilities in Clients with Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE). Seattle, Washington; University of Washington School of Medicine 1996



The Economic Cost of FASD

More than a decade ago researchers estimated that it cost \$1.5 million (U.S.) to provide services to each affected individual over the course of their life. In 2002, Lupton published an updated cost analysis of FASD. He calculated the lifetime cost for each affected individual at \$2 million (U.S.). This includes medical treatment, special education, and institutional care.¹⁸ This is more than \$20,000 per year for each individual or a cost in N.B. of \$140,000,000 annually for the more than 7,000 people affected.

The Social Cost of FASD

The social cost of FASD is even higher. FASD places a great burden on families and communities as well as our provincial social systems in terms of justice, education, health, and welfare.

Individuals with FASD Can Learn

With the proper support individuals with an FASD disability can learn and develop their own particular gifts and strengths. Some individuals with FASD graduate from High School. Some have gone on to college and even university. With the proper support individuals with an FASD disability may be able to lead positive and fulfilling lives.¹⁹

¹⁸ Lupton C, Burd L, Harwood R. Cost of fetal alcohol spectrum disorders. *Am J Med Genet* 127C:42-50 2004.

¹⁹ Streissguth AP. Fetal Alcohol Syndrome: A Guide for Families and Communities. Toronto: Paul H. Brooks Publishing 1997

Malbin DB. Stereotypes and Realities: Positive Outcomes with Intervention. In Kleinfield J, and Wescott S (eds.) Fantastic Antoine Succeeds! Experiences in Educating Children with Fetal Alcohol Syndrome. Fairbanks, Alaska: University of Alaska Press 1993